# Analytical plan

# Aims

* Aim1: describe the temporal change of the antibody data from 1Y to 7Y
* Aim2: identify the clinical factors that affect the antibody data
* Aim3: identify the microbial factors that affect tbe antibody data
* Aim4: examine the association of S.aureus colonization with the antibody data

# Aim0 (-M, main; -S, supplement)

* Figure-M: scheme of the cohort
* Table-S: sample size (overall, antiboday, and feces at each ages)
* Table-M: demographics (overall cohort vs. analytic cohort)

# Aim1

* Figure-M: pathplot (titer)
* Figure-M: alluvium plot (positive/negative for Hib)
* Figure (Table?) -S: relationship of the number of vaccination with antibody data

# Aim2

* Table-M: association of clinical factors with antibody data

# Aim3

* Figure-M: heatmap of microbial data and antibody data (Spearman’s correlation)
  + Skin bacteria
  + Nasopharyngeal bacteria
  + Gut microbiota (alpha diversity)
* Figure-S: heatmap of gut microbiota and antibody data (Envfit)
* Table-S: correlation of gut microbiota with antibody data

# Aim4

* Table-S (M?): association of S.aureus with log-transformed titer (fold-change from 2Y?)
* Table-M: association of S.aureus with postive/negative for Hib